## Socioeconomic changes in the commercial California spiny lobster fishery around the Channel Islands

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Have state marine protected areas (MPAs), which were established in 2003, affected the commercial California spiny lobster fishery around the Channel Islands? To answer this question, I compiled data from 8 years of commercial lobster fishery logbooks from the California Department of Fish and Game and interviewed 70% of the fishermen in the region's lobster fleet. The logbook data spanned 5 years before and 3 years after the MPAs were established. Using the data from logbooks and interviews, I evaluated changes in numbers of lobster fishermen, fishing effort, and catch per unit of effort (CPUE) at the Channel Islands and mainland coast.

## **Key Findings:**

- The total number of lobster fishermen in the Channel Islands region decreased overall since 1999, and changes at Santa Cruz Island account for approximately 50% of the decrease (Table 1).
- Before 2004, annual average catch per unit effort (CPUE) was higher at the Channel Islands than along the mainland coast. After 2004, average annual CPUE along the mainland coast was higher than at the islands (Figure 1).
- The reduction in CPUE at the Channel Islands is driven by changes at Santa Cruz Island, where some individuals in the lobster fishery experienced reductions of 7-30% in their personal CPUE.
- Increases in CPUE around Santa Rosa and Anacapa Islands, as well as along the mainland coast, may be linked to natural fluctuations in lobster abundance.
  Throughout the range of this species, from Point Conception to the southern extent of the Baja California peninsula, lobster harvests set records in 2004 and 2005.

**Table 1.** Numbers and locations of lobster fishermen in the Channel Islands region before and after MPAs were established (2003). Some fishermen use several locations, so the sum of numbers at each location is greater than the total number.

Locations	Before MPAs	After MPAs
Mainland Locations:		
North of Santa Barbara Harbor	19	18
South of Santa Barbara Harbor	17	14
Island Locations:		
San Miguel Island	1	2
Santa Rosa Island	13	11
Santa Cruz Island	20	13
Anacapa Island	6	4
Total Number of Fishermen	43	36

Figure 1. Numbers of lobster fishermen at the Channel Islands (green hashed bars) and mainland coast (blue bars) and average catch per unit of effort (CPUE) as reported in lobster fishery logbooks from the Channel Islands (dashed green line) and mainland coast (solid blue line). State MPAs were established in April 2003 (red solid line).

